REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claim 1 is currently being amended.

This amendment changes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-21 are now pending in this application.

Claim Rejections under 35 U.S.C. § 112

Claims 1-10 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In response, without agreeing or acquiescing to the rejection, Applicants have amended claim 1 to adhere to the requirements under 35 U.S.C. § 112, second paragraph. Accordingly, Applicants request that the rejection be withdrawn and claims 1-10 be allowed.

Claim Rejections under 35 U.S.C. § 103

Claims 1-7, 11-17 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2004/0209624 ("Rune") in view of U.S. Patent Publication No. 2003/0171123 ("Laakso"). In response, Applicants traverse the rejection for the reasons set forth below. Claims 8-10 and 18-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Rune in view of Laakso and U.S. Patent Publication No. 2002/0193118 ("Jain").

Applicants rely on MPEP § 2143.03, which requires that all words in a claim must be considered in judging the patentability of that claim against the prior art. Here, the cited

references do not identically disclose, teach or suggest all the claim limitations. *See In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Claim 1 recites a control device for a wireless communications network having a plurality of base stations and a plurality of mobiles. The control device includes a calculator of quantities related to attenuations measured between mobiles and base stations, and/or to the signal to interference and noise ratio threshold and a decision device with regard to the processing of new candidate mobiles. The decision device and calculator operate together according to a predefined mechanism. ***For each mobile served*** by the base station and ***for each new candidate mobile to the base station*** the mechanism includes a load calculation function capable of calculating the load induced by said mobile to the base station, as a sole function of the quantities output by the calculator, and an evaluation of a load condition associated to the base station, as a function of the loads calculated for the mobiles served by the base station and candidates to the base station, the load condition representing the feasibility of the power allocation to the mobiles by the base station.

Claim 11 is directed toward a control method for a wireless communications network having a plurality of base stations and a plurality of mobiles. For at least one given base station, the method calculates a load for each mobile served by the base station and for each new candidate mobile from quantities related to attenuations measured between mobiles and base stations and/or to the signal to interference and noise ratio threshold.

Thus, the load calculation and evaluation is performed for each base station in the network according to a decentralized approach. Further, according to the claimed invention, the load calculation does not depend on the transmit power of the mobiles. In addition, the load calculation may be performed for the mobiles that are served as well as for the mobiles that are seeking to be served. The claimed method evaluates a working condition representing the feasibility of power allocation to the new mobiles by the base station. Then, the method determines how to treat the new candidate mobiles.

The load calculation of claims 1 and 11 is a function of the individual load contributions calculated for mobiles being served by the base station and candidates to the

base station. The known load condition for each base station is evaluated independently. In addition, the claimed invention acquires a new load condition, based on specific parameters, that is adapted to be evaluated for each base station independently. Accordingly, the device and method claimed in claims 1 and 11 is capable of processing each base station independently from the other base stations in order to rapidly provide a load indicator for each base station that is accurate and does not fluctuate.

The Office Action acknowledges that Rune fails to disclose, "for each mobile device served by the said base station and for each new candidate mobile to said base station, a load calculation function capable of calculating the load induced by said mobile to said base station, a sole function of the quantities output by said calculator." *See* Office Action at p. 4. To cure the deficiencies of Rune, the Office Action relies on Laakso. This contention is respectfully traversed.

Laakso is directed to radio resource management in a communication system. Paragraph [0031] and formula (3) of Laakso describe a way to estimate the load factor L of a cell, for an already connected (or served) user. Formula (3) is based on the chip rate, the bit rate, and a EbN0 value, which is the "signal energy/noise ratio of the connection" (or SIR - Signal to Interference Ratio).

This has no real connection with the claimed device and method, since Laakso is based on a completely different load calculation that is solely based on signal losses (or attenuations) and SINR (Signal to Interference plus Noise Ratio) threshold.

The Examiner relies on paragraph [0031] of Laakso, which says: "The measure L provided by the equation (3) can be used when providing a target value for the powers in the radio resource management (RRM). The uplink own cell load factor L may be used as uplink load indicator, i.e. it determines the uplink load of the own cell. For example, if the uplink own cell load is said to be 60% of the WCDMA pole capacity, it means that the load factor L = 0.60. However, the L considers only the load caused by the own cell users. As will be discussed in more detail later, ***the actual total uplink load η is (l+i)*L***, wherein I designates the other to own cell interference ratio. If the uplink total load factor $\eta = 0.60$, the uplink

load is 60% of the WCDMA pole capacity. The uplink total load factor η, which is also sometimes called fractional load, can be calculated as follows: Noise raise = formula (5)." (Emphasis added.)

In the formula: $\eta = (1+i)*L$; Laakso introduces an arbitrary value i, which is supposed to represent the "other-to-own cell interference ratio." Consequently, the load disclosed in Laakso is dependent upon power levels and interferences of all mobiles in connection with the receiving base station and in connection with all other base stations within distinct cells. By interference Laakso primarily means adjacent channel interference (ACI).

In other words, Laakso describes an uplink load calculation that is based on a heuristic method taking into account interferences (1+i) that are measured (L) according to power levels received by a base transceiver station. The radio resource management then uses an empirical threshold rule (L_Total < L_Target) for admission control. In this approach, if the SINR thresholds (or requested bitrates) are not feasible, the needed power levels are infinite.

In contrast, the claimed load calculation function is completely different and is explicitly based on attenuations (i.e. propagation losses – See page 9, lines 25-30 of the application) measured between the mobiles and the base stations, using an expression relating to SINR threshold (See formula A.2 - page 13, lines 16-18 of the application as filed). Only the attenuations between the couples mobile/base-stations (m/u and m/v) are considered for the load calculation of the mobile (m) towards the base-station (u). As a result, in the device as claimed, the load calculation is completely disconnected from power levels and interferences, and even more disconnected from power levels and interferences between all the participating mobiles. Further, contrary to what is disclosed in Laakso, only the candidate mobile itself is considered instead of the other mobiles operating within the same or distinct cells.

Accordingly, for at least this reason, the rejection as to independent claims 1 and 11, concerning Rune and Laakso, should be withdrawn. Additionally, the claimed device and method provide a substantially accurate solution to the problem of deciding whether to serve mobile candidates, or not. In contrast, Laakso introduces a factor i which is an estimate of the

"other to own cell interference ratio." This factor i is calculated according to power levels (19); due to the uncertainty on i and to the fact that the method of Laakso is not fully precise, Laakso has to use an arbitrary threshold rule (L_target).

When determining whether a claim is obvious, an examiner must make "a searching comparison of the claimed invention – *including all its limitations* – with the teaching of the prior art." *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis added). Thus, "obviousness requires a suggestion of all limitations in a claim." *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (*citing In re Royka*, 490 F.2d 981, 985 (CCPA 1974)). Here, the cited references fail to disclose each and every limitation in as complete detail as is contained in independent claims 1 and 11.

Claims 2-10 and 12-21 depend from one of independent claims 1 or 11 and should be allowed for the reasons set forth above without regard to further patentable limitations contained therein. Further, Jain fails to cure the deficiencies of Rune and Laakso.

If this rejection of the claims is maintained, the examiner is respectfully requested to point out where the above-mentioned features are disclosed in the cited references.

Conclusion

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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